

**REMARKS**

Claims 1-6 are pending. By this Amendment, claims 1-6 have been amended and claim 7 has been canceled without prejudice or disclaimer of the subject matter found therein. No new matter is involved.

Entry of the amendments is proper under 37 CFR §1.116 since the amendments: (a) place the application in condition for allowance (for the reasons discussed herein); (b) do not raise any new issue requiring further search and/or consideration (since the amendments amplify issues previously discussed throughout prosecution); (c) do not present any additional claims and cancel one finally rejected claim; and (d) place the application in better form for appeal, should an appeal be necessary. The amendments are necessary and were not earlier presented because they are made based on arguments raised in the final rejection. Entry of the amendments is thus respectfully requested.

In the claims, "a first parameter quantity indicative of rolling amount" has been changed to read --a rolling amount--; "a second parameter quantity indicative of a change rate of the rolling amount" has been changed to read -- change rate of the rolling amount--; "second parameter quantity" has been changed to read --change rate of the rolling amount"; "first parameter quantity" has been changed to read --rolling amount--; and "first and second phase parameter " has been changed to read --first and second change rate of the rolling amount--. The replaced claim language has been discussed throughout the prosecution of the application in these terms. No new issues are raised by changing of this terminology and Applicants respectfully submit that this terminology simplifies understanding of the claims, thereby simplifying issues on appeal. These changes are to remove the use of unnecessary labels representing a numerical value. The use of "parameter" only indicated the rolling amount and change of rate of the rolling amount had mathematical or numerical values. Thus "parameter" was redundant and appears to have introduced confusion.

Applicants acknowledge with appreciation the indication of allowable subject matter in claims 2, 3 and 6 . Applicants have not re-written claims 2, 3 and 6 in independent form however, because of Applicants' belief that claim 1, from which claims 2, 3 and 6 depend, is patentable over the applied art, for reasons stated below, and in view of the terminology change discussed above.

The Office Action notes that the Amendment filed December 27, 2002 fails to include certain changes in the marked-up version of claim 1. Applicants thank the Examiner for catching this, and attach a corrected Appendix which reflects those changes, thereby complying with the provisions of 37 CFR §1.121(c).

The Office Action rejects claims 1, 5 and 7 under 35 USC § 103(a) as unpatentable U.S. Patent 5,915,801 to Taga et al. (hereinafter "Taga") in view of Harada et al. (JP-10-278762, hereinafter "Harada"), corresponding to U.S. Patent 6,081,761). This rejection is respectfully traversed.

The rejection is moot with respect to canceled claim 7.

The Office Action asserts that Taga's brake controller comprises a means for providing "a first parameter quantity indicative of" a rolling amount of the vehicle body or the number of revolutions of the driving wheels as disclosed in col. 4, lines 3-5, thereby apparently equating the "first parameter quantity", formerly called "rolling amount of the vehicle body" when addressing the invention, (hereinafter "the change rate of the rolling amount" when discussing the invention, recited in claim 1 with the number of revolutions of the driving wheels.

The Office Action indicates that, in Taga, "the second parameter quantity indicative of" (hereinafter "the change rate of the rolling amount" when discussing the invention) a change rate of the rolling amount of the vehicle body is disclosed in col. 7, lines 37-38. Applicants assume that the second parameter quantity according to the Office Action is "a

change (deceleration) in the number of revolutions of four wheels", which is the substance of col. 7, lines 37-38.

The Office Action then indicates that, in Taga, "means for calculating a target deceleration of the vehicle based on the second parameter quantity so as to increase the target deceleration from a predetermined minimum value" is allegedly shown in Fig. 8 immediately above number 0 on the y-axis to a predetermined maximum value or the target deceleration corresponding to the maximum speed of the vehicle (which is said to be predetermined by the automobile manufacturer) along with an increase of the second parameter quantity (assumed to be deceleration of the four wheels) as disclosed in col. 7, lines 31-34.

Applicants respectfully submit that col. 7, lines 31-34 merely disclose an example of the first control map, shown in Fig. 8, where vehicle speed is correlated with the target deceleration, indicating that the target deceleration increases as the vehicle speed is increased. Neither Fig. 8 nor col. 7 lines 31-34 disclose increasing a target deceleration from a predetermined minimum to a predetermined maximum value along with an increase of the change rate of the rolling amount or means for calculating a target deceleration of the vehicle based on the change rate of the rolling amount to achieve that increase.

The Office Action appears to be alleging that when the second parameter quantity, of Taga, (deceleration in the Office Action) increases, Taga calculates a target deceleration that increases from a predetermined minimum (above 0 in Fig. 8) to a predetermined maximum (achieved at the fastest speed at which the vehicle manufacturer determined that the vehicle can travel). In other words, according to the Office Action, when Taga increases deceleration, i.e., slows down faster, his target deceleration increases from a predetermined minimum to a predetermined maximum.

This does not make sense to Applicants who do not understand why one of ordinary skill in the art would want to increase target deceleration when the vehicle is already increasing its deceleration.

Moreover, Taga is totally devoid of disclosure of calculating predetermined maximum and minimum deceleration values, let alone even discussing predetermined maximum and minimum deceleration values, per se.

Accordingly, Taga does not disclose or suggest this aspect of the claimed invention.

The Office Action continues by alleging that Taga discloses means for controlling the brake system, such that the brake system is actuated or the target deceleration is changed to accomplish target deceleration of the vehicle when the first parameter quantity (or, as alleged in the Office Action, distance from a forward obstruction which is based on the number of revolutions of the wheels) exceeds a threshold value predetermined therefor as disclosed in col. 7, line 61 to col. 8, line 4.

Applicants are confused by this assertion that the "first parameter quantity" of Taga is "distance from a forward obstruction which is based on the number of revolutions of the wheels." In the first part of the rejection, the "first parameter quantity" is said to be indicative of "the rolling amount of the vehicle body or revolution of the driving wheels as discussed in col. 4, lines 3-5." Col. 4, lines 3-5 never mention "a forward obstruction" or "distance from a forward obstruction" or "distance from a forward obstruction which is based on the number of revolutions of the wheels."

In essence, the Office Action is presenting the "first parameter quantity" which was used as a mathematical label for "the rolling amount of the vehicle body" as a moving target that changes or moves from one definition to another in the short course of the rejection. This is unfair to Applicants and denies them fundamental substantive and procedural due process to which they are entitled under the Administrative Procedures Act. See in this

regard, In re Zurko, 119 S.Ct. 1816, 50 USPQ2d 1930 (1999), and In re Gartside, 53 USPQ2d 1769 (Fed. Cir. 2000).

Considering the second definition of a first parameter quantity indicative of a rolling amount of the vehicle body, in the context of Taga, from col. 7, line 61 to col. 8, line 4, Taga states that "[F]or example, a variable on the horizontal axis of each control map can be a distance from a forward obstruction (including other vehicles), a relative speed thereto, or a rate of change of the relative speed. In this case, each control map is preferably designed so that the braking torque or the deceleration becomes high when a forward obstruction tends to approach the vehicle."

Applicants respectfully disagree with this allegation that Taga discloses means for controlling the brake system, such that the brake system is actuated or the target deceleration is changed to accomplish target deceleration of the vehicle when the first parameter quantity (or, as alleged in the Office Action, distance from a forward obstruction which is based on the number of revolutions of the wheels) exceeds a threshold value predetermined therefor as disclosed in col. 7, line 61 to col. 8, line 4.

In the first place, "the target deceleration . . . predetermined therefor", in Taga, has nothing to do with the brake system actuation (including how the brake system is started to actuate), so "brake system actuation" and "target deceleration is changed" are not proper alternatives with respect to achieving target deceleration. In the second place, Taga, in col. 7, line 61 to col. 8, line 4, merely discloses that a variable on the horizontal axis, i.e., abscissa, of each control map, such as shown in Figs. 3-9, may be changed to a distance from a forward obstruction (including other vehicles), so that in Fig. 3, for example, the target braking torque is changed according to the distance from a forward obstruction. However, even when the abscissa of those figures is changed to the distance from a forward obstruction,

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it is not known when the brake system is actuated or started. Taga does not disclose a "threshold" for starting the brake system.

However, the invention of claim 1 is recited in terms of the rolling amount of the vehicle body (what the first parameter quantity represents) exceeding a predetermined threshold value predetermined therefor, not in terms of a distance from a forward obstruction which is based on the number of revolutions of the wheels. Thus, this aspect of the rejection, that provides a different definition of the "first parameter quantity" of Taga than originally presented does not actually address the claimed invention and, for at least that reason, is improper.

Applicants' claimed invention starts a roll suppression control when the roll amount exceeds a threshold value and, once the roll amount is started, the magnitude of the roll control is increased according to the change rate of the roll amount. In this way, the threshold roll amount for starting the roll suppression control can be heightened so that frequent operations of the roll suppression control in response to small non-serious rolling are avoided, while compensating for the delayed start of roll compression control by appropriately increasing the target deceleration for the roll suppression control according to the level of the change rate of the roll amount, i.e., the level of emergency of the rolling suppression control.

This claimed invention synergistically combines a higher threshold for starting roll suppression control with compensation for the higher threshold, balancing an actual emergency with unnecessary, and possibly uncomfortable, initiation of the roll suppression control system for small or low level rolling motion, i.e., in other words, increasing the target acceleration along with the change rate of the rolling amount, thereby avoiding too frequent operations of the brake system which shorten the life of the brake system. The applied references do not address the claimed subject matter which uses this synergism.

Moreover, the Office Action admits that Taga does not disclose that its device is used to control over-rolling. In an attempt to remedy this deficiency, the Office Action turns to Harada. Harada, in the last four lines of its Abstract, allegedly teaches "the use of a brake controlling device utilizing target deceleration control to improve vehicle drivability by preventing over-rolling of a vehicle." The last four lines of Harada's Abstract actually disclose that when a vehicle is about to exceed its safe speed as it turns, it is automatically decelerated to the safe speed or below to be prevented from spinning, drifting out or rolling over.

The alleged motivation for modifying Taga in view of Harada, is "in order to provide a means of improving overall vehicle stability."

Proper motivation to a skilled worker does not means mere possibility, but actually means the desirability to make the proposed reference combination. Merely that the prior art can be modified in the manner suggested by the Examiner does not render the modification obvious unless the prior art suggests the desirability of the modification. In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783-4 (Fed. Cir, 1992).

Whereas it may be possible to modify Taga, in some unexplained manner, the Office Action fails to make out even a prima facie case that it would be desirable to not only combine these two references in some manner, but in the specific manner suggested in the Office Action.

As the Federal Circuit has stated, the showing of a suggestion, teaching, or motivation to combine the prior art references , which is an "essential evidentiary component of an obviousness holding." C.R. Bard, Inc. v. M3 Sys. Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232(Fed. Cir. 1998), must be clear and particular, and broad conclusory statements about the teaching of multiple references, standing alone, are not "evidence." See In re Dembiczak, 175 F.3d 994 at 1000, 50 USPQ2d 1614 at 1617.

All that has been presented regarding motivation to combine these references by the Office Action is a broad conclusory statement "to provide a means of improving overall vehicle stability", which is not evidence of proper motivation to combine these references at all, let alone in the specific manner suggested.

Taga the base reference, fundamentally differs from Applicants' invention. Indeed, the invention, recited in claim 1, is a roll control in which the over-rolling of the vehicle body is suppressed by decelerating the vehicle based on a counterbalance between the rolling moment caused by a vehicle turn while the vehicle is rolling and the spring action of the vehicle suspension mechanism which is biased by a centrifugal force which, however, is decreased by a deceleration of the vehicle running speed achieved by the over-roll control. This is a feedforward control because it does not trace the amount of rolling itself. This is the reason why the target value, deceleration, is increased from a predetermined minimum value to a predetermined maximum value according to an increase of the change rate of the rolling amount. The feedforward control is superior in terms of quickness of response as compared with a feedback control, while some restriction is generally desired against an over-control. The feedforward control needs to be triggered to start by an appropriate measure. In the invention, it is achieved by the rolling amount of a vehicle body exceeding a threshold value predetermined therefor. Taga never discloses or suggests this type of control.

Taga fails to disclose such a feedforward control. Taga is concerned primarily with regenerative braking to simulate engine braking torque. Harada does not employ regenerative braking nor is it interested in simulating engine braking torque with a regenerative braking system. Nor is there any suggestion in either Taga or Harada of using a regenerative braking simulation system to control over-rolling of a vehicle.



Therefore, there would be no incentive to one of ordinary skill in the art to somehow modify Taga, in view of Harada, (which do not even disclose regenerative braking or regenerative braking simulation), in some unspecified manner to modify the target deceleration control of Taga to include the over-rolling of a vehicle in the aforementioned feedforward manner.

Applicants also respectfully point out that the rejection fails to demonstrate that modifying Taga in view of Harada as suggested is even feasible. Harada does not provide a second parameter quantity indicative of a change rate of the rolling amount of the vehicle. Therefore, the rejection is based on plucking a single parameter from Harada without any suggestion to do so in either Taga or Harada and without regard to the operation of the reference combination or how to make the reference combination work once the parameter is plucked from Harada. Moreover, the case law requires that for motivation to be proper, showing that something is feasible is not enough. Just because something is feasible does not mean that it is desirable or that one of ordinary skill in the art would be motivated to do what is feasible. See Winner International Royalty Corp. v. Wang, 53 USPQ2d 1580 (Fed. Cir. 2000) which points out that motivation to combine references requires a showing not just of feasibility, but also of desirability.

Accordingly, this rejection of claims 1 and 7 is without merit and should be withdrawn.

With respect to claim 5, the Office Action makes yet another modification to Taga by abandoning deceleration in Taga as the change rate of the rolling amount and equating it with vehicle speed  $v$ . In this regard, the rejection states "see the equation between lines 17 and 20 in col. 10 of Harada in which the second parameter quantity or vehicle speed  $v$  is estimated . . . ." The Office Action fails to present any reasoning to explain the desirability of making such a drastic change from deceleration to vehicle speed, a change which

fundamentally alters a characteristic of the base reference - Taga. The Office Action also fails to explain if this change will result in an operative device. Moreover, the Office Action does not explain how vehicle speed is indicative of a change rate of rolling amount of the vehicle body.

It is well settled that one of ordinary skill in the art would not be motivated to combine references if that combination would result in eliminating a fundamental characteristic of the reference that is modified and thereby actually teaches away from the patent. This is strong evidence of nonobviousness. See W.L. Gore & Assoc., Inc. v. Garlock, Inc., 721 F.2d 1540 at 1550, 220 USPQ 303 at 310 (citing Application of Kuderna, 426 F.2d 385, 165 USPQ 575 (C.C.P.A. 1970) ).

Accordingly, Applicants respectfully submit that these rejections of claims 1, 5 and 7 are improper and should be withdrawn.

The Office Action rejects claim 4 under 35 USC §103(a) as unpatentable over Taga in view of Harada as applied in the rejection of claim 1 and further to in view of U.S. Patent 5,335,176 to Nakamura. This rejection is respectfully traversed.

The Taga - Harada reference combination fails to render the claimed invention obvious for at least the reasons stated above.

Nakamura is applied to teach, in equation 3, near line 55 of col. 2, that the second parameter quantity is estimated to be substantially proportional to change rate of steering angle effected by the steering system of the vehicle.

Applicants submit that it is logical to assume that the change rate of the rolling amount in the Taga et al - Harada reference combination applied in the rejection of claim 1 is "deceleration", because the change rate of the rolling amount was not changed to vehicle speed  $v$  with respect to the rejection of claim 1. However, this assumption is challenged by the assertion in the rejection that the change rate of the rolling amount is vehicle speed.

Applicants submit that using vehicle speed as the change rate of the rolling amount can only be based on the rationale used to reject claim 5 (not claim 1). Moreover, how vehicle speed can be a change rate of the rolling amount of the vehicle has not been explained.

Nevertheless, Nakamura is applied on the basis that its vehicle speed  $v$  is the change rate of the rolling amount and is "estimated to be substantially proportional in an inverse manner to a change rate of steering angle effected by the steering system of the vehicle."

Applicants submit that the changing of the change rate of the rolling amount from deceleration to vehicle velocity fundamentally changes Taga and is arbitrary, capricious and an abuse of discretion and, therefor, improper.

This alleged motivation is nothing more than a broad conclusionary statement that fails to provide evidence of the desirability of the proposed modification, and because Taga's system apparently works well without the need for an alternate means of achieving vehicle deceleration, the Office Action fails to demonstrate the desirability of such a modification.

Nakamura merely measure the rate of change of the steering angle as one of any inputs to predict the roll angle of the vehicle. Neither Taga nor Harada include such a parameter in their devices. Taga never mentions using a parameter to measure the tendency of a vehicle to roll over. Harada appears content to simply use the steering wheel angle and compute a steering wheel angular speed - see col. 8, lines 40-64. There is no proper motivation for one of ordinary skill in the art to modify either reference to measure the change rate of the steering angle. The assertion that one could use this parameter as an alternative is, at best, an assertion that it might be feasible, but not that it would be desirable. The only teaching of the desirability of using such a parameter is found in Applicants' disclosure. Thus, the reference combination of Taga, Harada, and Nakamura is improper and does not render the claimed subject matter obvious for the reasons stated above.

Accordingly, Applicants respectfully submit that the rejection of claim 4 under 35 USC §103(a) is improper and should be withdrawn.

For the aforementioned reasons, reconsideration of the application is requested. It is submitted claims 1-6 are patentable and should be allowed.

Should the Examiner believe that anything further is needed to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,



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